

IN THE SPECIFICATION:

Replace the paragraph beginning on page 10, at line 22, with the following:

[0021] To use the material in manufacturing a desired final product, ~~assuming that a shape of the final product is 100%, the~~ aluminum alloy is used to cast a preformed product having a forging ratio R of 18 to 60% as defined by the equations shown in Paragraph 0043 below, and subsequently the preformed product may be cast and formed in the shape of the final product. Accordingly, it is possible to manufacture the parts for vehicles with a lower cost and higher productivity as compared with low-speed casting using AC4CH.

Replace the paragraph beginning on page 12, at line 16, with the following:

[0024] For the material for forging, while the respective components are adjusted so as to obtain the composition of the aluminum alloy according to the present invention, the flash generated at the time of the forging may be reused as the raw material. It is to be noted that ~~assuming that the shape of the final product is 100%, a shape~~ forging ratio R defined by the equations shown in Paragraph 0043 below of the raw material for

forging, that is, the preformed material is preferably 18 to 60%. Therefore, it is possible to preferably manufacture the suspension parts for the vehicles, the frames for the vehicles, and the parts for engine by the method of manufacturing an aluminum cast-forged product according to the present invention.

Replace the paragraph beginning on page 13, at line 6, with the following:

FIGS. 2(a), (b), and (c) are views showing one example of a method of manufacturing an aluminum cast-forged product of the present invention, FIG. 2(a) is a schematic explanatory view showing a difference in shape of a preformed material for each forging ratio R defined by the equations shown in Paragraph 0043 below at the time of casting, FIG. 2(b) is an enlarged side view showing one example of a cast body in which an internal defect is generated at the time of the casting, and FIG. 2(c) is an enlarged side view showing one example of a cast body in which no internal defect is generated at the time of the casting; and

Replace the paragraph beginning on page 13, at line 16, with the following:

FIGS. 3(a) and (b) are sectional views of the preformed material showing the forging ratio R defined by the equations shown in Paragraph 0043 below.

Replace the paragraph beginning on page 19, at line 26, with the following:

[0042] These raw materials are charged in a melting furnace and is heated to a temperature at about 680 to 780°C to be melted, and next is charged into a holding furnace where a degassing treatment and deoxidizing treatment are done to obtain a molten metal. In this case, the temperature of a mold is preferably adjusted at about 60 to 150°C. Also, the mold preferably has a shape such that a forging ratio R is about 18 to 60% as defined by the equations shown in Paragraph 0043 below, ~~assuming that the shape of the final forged product is 100%,~~ because the strength is enhanced by the subsequent forging and the forging process can further be simplified. That is, when the forging ratio R as defined by the equations shown in Paragraph 0043 below is set to about 18 to 60%, the strength improving effect due to the forging and the cost reduction due to a simplified forging process are balanced.

Replace the paragraph beginning on page 20, at line 13, with the following:

[0043] Herein, the forging ratio R as defined by the equations shown below means a value representing the degree of forming. For example, as shown in FIG. 3(a), when a material A with an initial thickness $D1$ is formed by a load F and the

thickness is changed to D2 after forming as shown in FIG. 3(b), a forging ratio R is represented by the following equation.

$$R[\%] = (D1 - D2)/D1 \times 100 \quad (D1 > D2)$$

However, when the thickness D2 after the forming is larger than the initial thickness, the forging ratio R is represented by the following equation.

$$R[\%] = (D2 - D1)/D1 \times 100 \quad (D2 > D1)$$

Replace the paragraph beginning on page 20, at line 24, with the following:

[0044] That is, in the present invention, the fact that the so-called preformed material having a shape such that the forging ratio R as defined by the equations shown in Paragraph 0043 above is about 18 to 60% ~~assuming that the shape of the final forged product is 100%~~ is obtained by the casting means that the preformed material having a shape such that the forging ratio determined using the thickness of each portion of the raw material for forging and the thickness of each corresponding portion in the final product obtained by forging the raw material for forging is about 18 to 60% in each portion is obtained by the casting.

Replace the paragraph beginning on page 22, at line 5, with the following:

[0047] In the method of manufacturing an aluminum cast-forged product of the present invention, after the raw material is melted to obtain the molten metal, the mold for the casting is brought closer to the shape of the product as compared with the conventional raw material for forging so that the forging ratio R as defined by the equations shown in Paragraph 0043 above is about 18 to 60% ~~assuming that the shape of the final forged product is 100%~~ while achieving the strength improving effect by the forging, by which the pressing is facilitated. Therefore, unlike the conventional forging process, steps of extruding, cutting, heating, rough forging, finish forging, and clipping flash are not observed, thus the manufacturing process can be simplified, and the manufacturing cost can be reduced.

Replace the paragraph beginning on page 23, at line 8, with the following:

[0050] After the raw material was melted at a molten metal temperature of 728°C to obtain the molten metal, the raw material for forging having a shape with a forging ratio R as defined by the equations shown in Paragraph 0043 above of 30% ~~assuming that the shape of the final steering knuckle 40 was 100%~~ was cast at a mold temperature of 100°C. Next, die forging was performed

Serial No. 10/674,811

using a forging press at a rough forging temperature of 395°C (surface temperature) by applying a rough forging load of 2770 tons to obtain a roughly forged material. Then, the roughly forged material was subjected to the die forging again using the forging press at a finish forging temperature of 460°C (surface temperature) by applying a finish forging load of 3260 tons. Finally, the finish forged material was trimmed. After a solution heat treatment which was a T4 treatment by heating the finish forged material at 530°C for three hours, the finish forged material was cooled. Then, an aging treatment was done as T6 treatment by heating the finish forged material at 180°C for six hours. Thus, the steering knuckle 40 was obtained as a product. In Example 2, operations similar to those of Example 1 were repeated to obtain the steering knuckle 40, except that the molten metal temperature was set to 720°C and the mold temperature was set to 125°C. Temperature conditions and load conditions are given in Tables 1 and 2, respectively.